

MANLEY (T.H.)

THE THERAPEUTICAL VALUE OF THE
MERCURIAL SALTS IN GENERAL
SURGERY.

Read at June Meeting of the King's County Medical Association, Brooklyn, N. Y.,

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THE THERAPEUTICAL VALUE OF THE MERCURIAL SALTS IN GENERAL SURGERY.¹

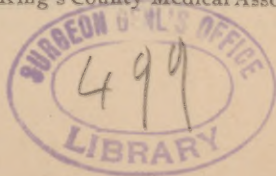
By THOMAS H. MANLEY, M. D.,

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AMONG the many branches or subdivisions of the healing art, as taught in modern times, there is one of immeasurable importance, which stands out in bold relief, when contrasted with any of the others; yet, strange to say, it is, in many medical centers, in modern times, but indifferently taught; and hence, in consequence of this, the average graduate of our times, when he comes into practice, has but the crudest knowledge of remedies; of therapeutics; the physical properties of drugs and substances which have long since been known to possess positive and active healing properties; of domestic medication, or rather, eclectic therapeutics. As he has been taught nothing of them, he knows nothing, except what he has learned, at his own fireside.

The great bent of modern teaching, in what we designate the regular school of medicine, has been to compel the student to give a very considerable part of his time to the study of the morbid anatomy, pathology, bio-chemistry and morphology of the physical lesions of deranged health and abnormal physiological processes, rather than to impart a full and practical knowledge of the curative agencies of them; their qualities, composition and action. In consequence of this state of affairs, although many clever young physicians can tell, almost at once, as they look through a microscope, the precise cellular elements observable on various glass slides, and yet not

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be able to recognize one tincture from another, or demonstrate how adulteration can be detected in many of those drugs most commonly employed. No doubt, the effort to describe the action of medicines on a purely scientific basis, and the disposition to discard those, which defy any application of art, to explain their *modus operandi*, have very largely led to the prevailing skepticism and downright Nihilism in therapeutics.

Certain schools of medicine teach the action and properties of medicines, with great thoroughness, and claim, with great zeal and sincerity, certain special, virtues, for certain drugs; when, administered in a certain way; whose claims, we are too often apt to regard with contemptuous scorn. But the public, the intelligent part of it, the most thrifty and wealthy element, in spite of what has, in modern times, been claimed by scientific medicine and the orthodox school, practically discards it, and selects for their prescribers, those trained in sectarian medicine. I say prescribers, because, for although they appreciate the diagnostic tact and prognostic acumen of the regular, they want none of his medicine; maintaining a skeptical attitude, as to his ability, to prescribe successfully. My own impression is, that this conviction of the public, is not without good and sufficient reasons; and that we will never regain our lost ground until the time arrives, when the properties and the varied actions of medicines are properly taught and understood.

Another peculiar characteristic of our time, is the growing tendency, to generally ignore the older remedies for the new; to neglect the employment of one class, which has been studied for ages, and the properties of which are well known, and rather, administer a new remedy, the composition of which very often is kept secret by the proprietors; and hence, the physi-

cian prescribing it knows almost nothing of its real properties.

On this occasion it is not my purpose to continue the discussion, of the present state of therapeutics, only so far as is necessary to open the discussion of the question selected for this evening's consideration. The scope of my remarks will be confined to one drug only, to mercury.

Probably in the whole gamut of medicinal agencies there is no single one which has gone through greater vicissitudes, has met with greater alternate praise and condemnation than the mercurial salts. At one time few recipes would be regarded complete which did not, in some form, contain mercury. The liver was looked upon as the *prima viæ*, and this drug was said to act, with special energy on this organ. Then came homœopathy, with the new doctrine of the self-limitation of disease; when a pronounced and wide-spread reaction set in against mercury, in every form. Its tendency to salivate, produce periostitis, the early loss of the teeth and hair, were brought up against it with such telling effect, that in a long interval, but little mercury was prescribed by many practitioners; never, as they claimed, when they had other remedies which would accomplish all, that it would, without its dangers. At this epoch it held its own in syphilis alone.

Now, while the general consideration of the immense value of the mercurials in all inflammatory affections would be a most tempting subject to review, at present, the use of mercurials, their indications and counter-indications will be discussed, but only so far as they are connected with general surgery.

It, no doubt, must be conceded, that any known remedy which can, when judiciously administered, serve as a preventive against the development of a condition that may necessitate a mutilation of the tissues; or which, in the event of a morbid condition

presenting itself, may, by its internal, constitutional action, cause the absorption or disintegration of a neoplastic formation, thereby rendering a bloody, and always, more or less dangerous, surgical operation unnecessary, should be accepted as one of the greatest blessings to mankind. That mercury possesses this power to a very large degree, when properly administered, cannot be gainsayed by any one who has ever observed its action over an extended period of time, or in a sufficient number of cases.

Effective anæsthesia, improved methods in dressings, with a better appreciation of the value of aseptic precautions, have, in recent times, very greatly extended the range of the operative field; so that, to-day, very many cases come under the surgeon's scalpel, which, in his own recollection, would largely have been treated by constitutional means alone.

It was discovered, that the corrosive sublimate solution served as a most efficient prophylactic in surgical operations, against ulceration and putrescence, and almost invariably prevented inflammation. It was at first supposed that it would also, in operations involving the peritoneum, render it less liable to contamination than in former times. Besides, in cases of peritonitis, it was thought, that by bringing this medicinal agent into direct contact with the inflamed membrane, by the open incision, a great gain would have been made, and, indeed, that such use of the mercuric solution in those cases is a most effectual therapeutic resort, is generally admitted; though the dangers incidental to its employment, the irritating action of the drug, etc., are so great as to render this immediate application of the mercurial, rarely an admissible procedure, in peritoneal surgery.

THE MODE OF ACTION OF THE MERCURIAL SALTS IN SURGICAL MALADIES.

Those maladies which are designated surgical, here, are such as generally, or most commonly, de-

mand mechanical measures and the division of the tissues for their relief.

Before one can set forth the maladies in which mercury acts with the greatest energy, and in which it is most appropriately prescribed, it is but rational that we should first determine how it acts, the circumstances which specially favor its administration, and those in which its use should be prohibited.

Until very recent times, it was taught that the special properties of the mercurial salts consisted, when given in inflammatory conditions, in their antiphlogistic action; in some peculiar tissue metabolism, which, by their assimilation, induced inflammation; local or general, was aborted or controlled. But, since the advent of the antiseptic epoch, the notions of their action have undergone some change; and not a few have gone so far, as to declare, that they act only as germicides; and, that their beneficial or alterative action, when taken internally, is always in proportion to the number of micro organisms, which their administration destroys or renders inert.

Accordingly, in consonance with this view, those salts were again being prescribed with greater frequency, for internal use; and it has been currently taught that solutions of the bichloride were the only ones which could be relied on in sanguinous operations, as efficient antiseptic agents. Experimental study and clinical observations, however, have failed to support these views, for it has been repeatedly demonstrated, that solutions of sufficient strength for germicidal purposes, cannot be employed with impunity; because, of their lethal action on the histological elements of a structure and the toxic symptoms which they may induce; while, on the contrary, solutions, too feeble, to destroy germs were, nevertheless, proven to possess positive antiphlogistic powers; and, not only prevent the onset of inflamma-

tion, but also, likewise, exert a most potential influence on inflammatory changes already developed.

Hence, in keeping with those later observations of investigators, the antiseptic theory has sustained a rude shake; so that, the rigorous antiseptic surgery so recently in vogue is now practically something of the past; and, hence, very much of what we may now see in the practice of its former most ardent devotees is little else, than a mere show of their former idol.

Nevertheless, regardless of how theories may come and go, to fit the fashions of the hour, to those who have had the opportunities of observing the action of the mercurial salts, it is unmistakable that they possess, in a very high degree, the power of subduing inflammation of various types, when judiciously administered.

In idiopathic, specific, and strumous or tubercular inflammation, they act with special energy. But how do they act?

It would seem that, since science has made such progress in synthetical and analytical chemistry, and the microscope has so greatly widened the field of biological research, that a precise and exact knowledge of the action of medicines, it should be easy to answer this question. It must be admitted, however, that in therapeutics, these resources have been of little substantial aid, and hence, dogmatic assertion about our ability to prescribe medicines, on a physiological basis, on the assumption, that certain definite pathological phases of disease call for various specific remedies, which, after all, is little more than mere talk. Biochemical studies, in the hands of physicians, have never yet given us, a single medicinal substance which has stood the test of time, as a therapeutic agent.

On the contrary, all of our most valuable medicines, without a single, solitary exception, are of an empirical origin. Experience in their use and bedside obser-

vation alone, have been, and must continue to be, our main guide in their employment.

It is generally conceded by observers that it is immaterial in what form mercury is administered, whether in the soluble or insoluble; by the mouth; by fumigation; by inunctive or subcutaneous injection, that its salts must undergo decomposition and liberation in the blood, and that it must act in a free state, before we observe its full therapeutic action. Hence, it must be eliminated as mercury, through the emunctories, as well as in combination with the phosphates, the chlorides or sulphates; and why caution must always be employed, not to charge the system with the drug, faster than it can be eliminated.

The use of mercury in my own practice, in dispensary, hospital, and private, has long since convinced me that the accidents attending its employment, and the unpleasant sequelæ following it, have been greatly exaggerated; and, that for its power of doing damage, it does not possess one-tenth the potency of morphine, in the way of effecting both the corporeal and moral ruin of its victims. Yet, like all powerful agents, its administration must be governed by vigilance and cautious judgment.

So much, then, for a preliminary consideration of the drug; now for the classes of surgical cases in which its intelligent employment may serve very many useful purposes to the surgeon or practitioner. It may, perhaps, simplify the description, of cases for mercurial treatment, to group them.

In the first category should go all those of whatever description in which we aim to remove a pathological condition by the drug acting through the general circulation. In the second, those cases only in which solutions are applied directly to a localized part, as to a fresh wound or diseased tissue.

In the first, are included, mainly, diseases of the osseous and the glandular systems, associated with a

scrofulous diathesis or syphilitic cachexia, or in which neither of these is clearly defined ; but, one of them is suspected. In inflammation of a serous membrane, particularly the peritoneum, and in all those morbid conditions of the general health, in which surgical intervention may be rendered necessary, which are attended with an impoverished state of the blood.

In many important particulars there is a very close clinical and pathological affinity between syphilis and scrofula, or tuberculosis, particularly in children.

Both are characterized by malnutrition, emaciation and anæmia ; both manifesting a special predilection for the bones and lymphatic glands. Rickets is a near relation, if not a member of either family.

Bacteriologists say that tuberculosis is always a disease acquired by the invasion of a bacillus, and that struma and tuberculosis are identical ; that in diseases of the spine and the joints in young children the germs have gained access to the system by one of the passages, and have been acquired from an individual already diseased.

It is needless to say, that if this were the fact, unless we were in possession of some medicinal agent possessing a specific action on the micro-organism, it would seem almost futile to attempt to combat tubercular maladies by internal medication. But clinical experience is not in harmony with this assumption, for every-one knows, that the offspring may be born tuberculous ; that the mother may transmit the disease to the unborn child ! aye, that the phthisical father may transmit the disease to the foetus, without infecting the mother ; and further, that extremes of poverty, close crowding, bad diet, and great exposure, each and all, favor the onset and hasten the progress of tuberculosis. It is well known, too, that there are medicinal substances which exert special and positive powers in curing tuberculosis ; in any of its protean forms, under certain circumstances, when judiciously

prescribed. Among them there is none which possesses these powers to a greater degree than mercury, either alone, or in combination with other substances. The great barriers in the way of its administration are the unreasonable prejudice of our patients, and the opposition of many of our professional brethren who are not familiar with its value; or, having tried it once or twice, failed to derive any benefit from it, and hence condemn its use. It may be inquired, but where does the drug fill a void in the surgical treatment of tuberculosis? My answer is, that in all those cases of osseous, arthritic, or glandular disease, which come under our care early, the surgeon, before resorting to any sort of mechanical treatment, should first determine what may be accomplished by the moderate course of mercury; for, whatever be the *fons et origo* of scrofula, we must all concede that it is a blood disease; hence, in order to eradicate it from the system, to arrest its progress when it has concentrated its energy on local structures, or to aid in the elimination of the detritus resulting from its action, we should begin our remedial measures by directing our attention to the general system, prescribing, along with hygienic measures, such an agent as will enrich the blood by increasing the number of red blood corpuscles in it, improving digestion, stimulating the emunctory glands, arresting inflammation, and dissipating the deposits resulting from it. Such an agent is mercury, which always held its own until it was driven from the field by homœopathy; but which, like everything in the universe, which possesses true and substantial worth, will endure for all time; and, when its merits are better appreciated, with the progressive spirit of this age, its action being better understood, it will occupy the position to which it is entitled in the domain of medicine.

The most common class of cases of a strumous nature which come almost daily under our observation is

characterized by an enlargement of the cervical, the axillary, or the mesenteric glands. The most common habitat of the tumefied lymphatics is the sub-maxillary triangle of the neck. Pale skin, dry, brittle hair, and a pot-belly, they say, are the chief characteristics of scrofula. And, hence, in these cervical cases, we will find those associated conditions of anæmia extensive implication of the mesenteric lymphatics, and general mal-nutrition.

Now, should those cases come under our observation when hyperplastic changes have commenced in the stroma, before suppuration has occupied the entire glands; then, regardless of how voluminous or numerous they may be, or how extensive the inflammatory processes which accompany them, by the aid of the local detergents and the antiphlogistic action of mercury, but few cases will fail to promptly yield. In another class of the same order, but pursuing a more chronic course, and, even though these may be scattered infarctions of purulent matter, through the parenchyma of the gland, the same drug may be advantageously employed to aid in the work of caseation, calcification, liquefaction, and absorption of inflammatory deposits.

Acting on the assumption, that these local, limited inflammations were always tubercular foci, each constituting a center, from which, at any time, the general system was liable to infection, surgery has been invoked for their prompt eradication. But this allegation is utterly without warrant. We might as well amputate the bulbed fingers of the consumptive as a prophylactic measure, as attempt to remove the tubercular state by such a procedure.

In my service at the Harlem Hospital during the winter of 1891, I made many and repeated microscopical examinations of diseased glands, which I had extracted from the necks of children, at that time; and, in not more than ten per cent. were there present any

bacilli] whatever. On the contrary, it has been affirmed by many able and independent observers that when these lymphatics are actually the seat of tuberculosis, their ablation is often promptly followed by a cumulative action in some distant vital organ—in the bones or in the articulations.

There are other pressing and very serious objections against the removal of those glands, when it is possible to efficiently treat them by conservative means. The first is, because, though we may readily clear out the superficial, subcutaneous group with the scalpel, the chances are nine to ten, that unless internal treatment go hand in hand, with surgical intervention, but a short time will elapse before those absorbents belonging to the deep chain, take on pathological changes and attain even a greater volume than those excised. But, the most vital objection of all, is the total destruction of the glands and the physiological results following in consequence of their loss. Many operative scars are unsightly.

Surgery, then, by the knife, should be called into requisition here, only, when we have exhausted conservative means. The therapeutic value of mercury has been thoroughly tested by ingestion, inunction, or subcutaneous injection, when these masses pursue a rebellious course, attaining a great size, thereby interfering with nutrition or producing a disfiguring effect. The same principles apply to inflammatory hyperplasia of any other of the superficial absorbents, regardless as to whether the irritating, lethal or infecting element, be of a venereal or a strumous origin.

Adenitis, of a venereal nature, one might suppose, should deserve something more than passing notice; that the lines should be clearly drawn between those cases following a true chancre or a chancroid, or those which may appear simultaneously with an acute infective gonorrhœa; and, that the remedial measures for each, should be of a specific character. Never-

theless, although each of those three diseases is, in many respects, clinically different, with separate and quite distinct pathological peculiarities, yet they are all infectious—are all venereal—and, though none, except the true Hunterian chancre, is said by many distinguished authorities to have the power of diffusing its virus and giving rise to constitutional syphilis, yet, there are so many cases of syphilitic manifestations after a varying space of time, following soft chancres, that we must, in several cases, be permitted to maintain an attitude of doubt with regard to this view. When we encounter those cases of sloughing, soft chancres, or buboes, which pursue a chronic, rebellious course in spite of every sort of topical treatment, the free administration of tonics and nutritious food ; but, which promptly yield when the mercurials are given, we must admit the identity, in many particulars, of the constitutional effects of the hard and the soft, infecting ulcer. In the type of arthritic inflammation, which arises co incidently or subsequently with gonorrhœa, we find the mercurial salt often acts almost as a specific.

Hence the propriety of employing an internal, prophylactic medicament, in suppurating, ulcerating or sloughing chancroids ; and, in gonorrhœa ; in those cases of the latter, especially, in which arthritis is threatened. It is unnecessary to dwell on the importance of pressing the administration of mercury in all the protean manifestations of chronic syphilis, such as synovitis, periostitis, diseases of the glands, the blood-vessels and the cerebro-spinal system, and in the obstructive lesions of the secretory or excretory canals ; in fact, in all cases, in which we are at all suspicious of specific disease, before we resort to active surgical methods for their relief, or cure.

It is not enough that our patient denies syphilis, for it is not necessary that he should have had a *visible* sore to subsequently develop syphilis ; in fact,

he may have lived perfectly continent and never have exposed himself, at all, and yet present symptoms of the specific disease lurking in the system. In other words, he may be innocently suffering from the inherited type—that type which I am confident constitutes the pathological ground-work, of the great majority of those cases of disease of the spine, of the hip and knee joint, in early life, which we commonly designate strumous or tuberculous.

In the cases here enumerated, at the present time, the vast majority of practitioners are restrained from more freely employing the mercurial salts through a vague fear of impregnating the system with a poisonous mineral, of inducing pyalism or salivation. Given under proper precautions, such as the intelligent and conscientious physician should always observe when he employs a powerful drug, there need be little apprehension of salivation or any lethal action supervening. Idiosyncrasies we must be on our guard for; hence, while our patient is taking mercury, he should be seen almost daily; when we will shortly observe, either one of two things occur, after a varying period of time, in *given* cases. We observe, either its therapeutical or its curative action appear; or, phenomena will present themselves, indicative of systemic poisoning. With the presence of the latter, the medicine must be promptly discontinued. When its salutary effects are present, then, according to circumstances, we may either reduce the dosage, or cease its continuance.

Mercury has long been known to clinicians, to possess, to a marvelous degree, the power, in arresting serous phlegmasia; of acting with something like specific energy in inflammatory affections of serous membranes, particularly in the meninges and the peritoneum.

If, by a therapy which includes the mineral under consideration, we can save a life in inflammation of

the peritoneum, or obviate the necessity of performing an abdominal section, we should invariably avail ourselves of it. But it may be alleged that as peritonitis is dependent on so many various etiological factors, the remedy appropriate for one phase of it might not be adaptable for another.

It would seem an absurdity, for instance, to employ the drug in appendicular inflammation with suppurative typhlitis. But if in a clearly-defined case of typhlitis the patient shudders at the very thought of the knife, or whether he does or not, as we cannot always promise a successful result after operation, and as we know that the vast majority of these cases, with little aid from art, recover, we cast about for some safe and effective medicinal agent; then there is nothing in the *Pharmacopœia* which "fills the bill" here, like mercury. Although the pathology of appendicitis is still very obscure, and no definite knowledge in this regard is obtainable, my experience in divers cases leads to the view that it is essentially a tubercular, degenerative inflammation. When appearing in children, those afflicted are almost invariably strumous; some local change usually serving as a fulminant, when it suddenly arises.

In cases of peritonitis of every description whatever, except those attended with well-defined pus accumulation, obstruction or perforation of a canal, mercurial inunction is a sovereign remedy. This assertion is not a matter of mere theory or idle speculation, but it is based on a considerable experience. In two cases of peritonitis, I was able to strike pus with my exploratory needle, yet the patients would not permit operation. Both cases recovered. Last summer, on the same day that I left for Washington, to attend the meeting of the American Medical Association, I operated for Dr. C. J. Cox, of New York, on a case of appendicitis. I found a perforation in the appendix, which had closed; besides a considerable accumulation

of pus, with a general peritonitis. The lad succumbed on the third day after the operation. By a strange coincidence, on the same day of my return, I was called to another boy, in which the attending physician, Dr. J. Began, thought the patient was suffering from appendicitis, and hence was a surgical case.

I decided here, after my recent ill luck, not to cut this case; but, at once commenced mercurial inunction, with the result of permanently and rapidly curing him. Several times have I been called for advice in this class of cases, in which, unless the indications for operating were definite and precise, I have been contented with mercurial massage and hot applications, with the happiest results.

Ten days ago, (April 20, 1892,) I had two cases of peritonitis in my hospital service at Harlem; one case in a man who had been run over by an ice-wagon, in which there evidently was a large hemorrhage within the peritoneal cavity; and the other being a genuine case of appendicitis, with all the classical symptoms, sent in for operation by Dr. Wm. Nye, of New York. They were both workingmen, and though both were in good form for operation, I hesitated to make a breach through their abdominal walls, which, should they recover from being laparotomized, would render them always, thereafter unfit for heavy manual labor. Both left the hospital cured, within a week, after inunction was commenced. A boy with typhlitis was sent in later for operation; he went home well, in ten days: mercurial treatment; no operation.

In women whom I have laparotomized, for ectopic pregnancy, uterine myomata and ovarian tumors, I have, for the consecutive peritonitis ensuing, applied this remedy, with a successful issue, in nearly every case.

I always administer the drug by inunction in peritonitis, employing equal parts of blue ointment and vaseline. Because of the danger of irritation in pur-

gation, I never give mercury by the mouth, in abdominal phlegmasia, which involve the peritoneum. It goes without saying, that this line of treatment to be efficacious, must be instituted early, and be systematically employed.

Solutions of the bichloride of mercury have been recently recommended by the French surgeons, particularly in the treatment of inflamed lymphatic glands and in phlegmons, injected directly, into and through the capsule or pyogenic membrane; the theory being, that the inflammation is always of a bacterial, or germ origin, and that the sublimate, by destroying the germs, would prevent the evolution of suppuration, or spread of the infection.

But the dangers of directly charging a blood-vessel, giving rise to acute inflammation or systemic poisoning, are so great that the method has not found favor. In my own hands, when its effects were not *nul*, it seemed to rather accelerate pus formation and the maturation of the inflamed tissues. I have, however, employed strong solutions with advantage in many cases of large chronic phlegmons, which, having been opened, have manifested a tendency to chronicity. In those cases, having drenched the capsule with sterilized water, I have destroyed its epithelial lining by the corrosive irritant, and thereby effected its obliteration, by adhesive inflammation.

The mercurial salts have, in the recent past, come into prominence in antiseptic surgery.

Sir Joseph Lister and others discovered that the corrosive sublimate was by all odds the cheapest and most valuable of all known chemical substance as an antiseptic agent; when, as we might expect, its employment became very popular throughout the world, until the doctrine of antiseptics itself, commenced to weaken and show signs of decadence.

When the use of mercury first came under my observation as an external antiseptic in flesh wounds,

and for flushing out suppurating or sloughing tissues, it occurred to me, whether the good results which often followed its employment were not rather attributable to its action on the protoplasm and to its indirect effect on vital processes by absorption and dissemination through the circulation, than by its antiseptic powers, *per se*. True, we could demonstrate under our eyes, with the microscope, its enormous germicidal powers, which, it would seem, should settle any dispute in this direction. But it does not settle anything, as we will find when we put the question under the focus of a rigorous scrutiny. Let us at once observe that the destruction of germs floating in any inanimate substance, as gelatine, bouillon, or other material, disconnected with life, and those imbedded in living, vital structures, are not quite one and the same thing.

Chemists tell us that a mercuric solution loses its potency when an albuminate is formed, and that this is especially the case with the bi-chloride salt. Now, how this is possible to avoid, when it is immediately applied to albuminous substances; as, in the case of a wound, it is difficult to understand.

The eye is an organ, which, more than any other in the body, permits us to observe vital, physiological and pathological phenomena. Here, we will observe in those infectious diseases of the conjunctiva, that a mercuric solution of ample strength to destroy germs may also do so much damage to the corneal epithelium as to threaten opacity.

In the surgery of the peritoneum, where infection was claimed to cause the greatest danger, mercuric solutions, owing to their irritating action on the endothelium, cause such subsequent adhesive inflammation and promiscuous welding together of everything that they have been discarded. And now, surgeons view the chief dangers of peritoneal surgery, as our old masters did, viz., to consist in exposure, shock,

hemorrhage and traumatic inflammations, rather than infection. Mercuric chloride, then, is not so much an antiseptic, pure and simple, as it is a medicament which exercises a profound influence on cell hyperplasia, on phagocytosis, and is a stimulant to the absorbents; besides, it is a regenerator of healthy elements, and an eliminator of effete substances. It may be well to mention, *en passant*, that, although this corrosive solution has been most sedulously employed in recent years in amputations, and when so employed, there is seldom suppuration; yet, its irritating properties so often give rise to an insidious osteomyelitis, as to leave so painful or tender stump, as to make a secondary amputation often imperative; so that in order to obviate the possibility of this unfortunate sequela, when the sublimate is employed on the bare stump, care should always be observed, to flush the excess away, by irrigation with sterilized water. It cannot be disputed, that in every instance, in which solutions of the sublimate are used for purposes of lavage or irrigation, either on raw surfaces, in pus cavities, on mucous or serous membranes, a considerable proportion is taken up by the circulation. Now, it might be interesting to inquire, just what rôle the medicine plays, exclusive of its germicidal powers, in favoring the recuperative processes. We need not inquire with reference to this in syphilitic cases, or those inheriting the malady; but, if we view the action of the drug as many yet do, in the presence of inflammation or impending inflammation, as actively antiphlogistic, we must rather assign its prophylactic virtues to this, than to its antiseptic properties.

Of later years, so general and widespread has been the practice, of the almost indiscriminate use of these powerfully, irritating solutions of the mercurial salts, that their use had come to be regarded as a panacea in every sort of inflammatory, ulcerative, or suppurative process demanding surgical management, that as

a natural corollary many serious consequences have resulted ; and hence, now, that sufficient time has elapsed, since this therapeutic adjuvant has been introduced, we are in a better position to calmly and impartially accord to it, its due merit ; and, besides consider a few of the most serious drawbacks and disadvantages attendant on its employment.

At the beginning of our inquiry in this regard, it might be asked, that inasmuch as the mercuric solution is the only one, worthy of the name, as an antiseptic, what substitute for it, shall we employ in operative surgery ? Time and observation have amply demonstrated that every sort of chemical solution is a foreign substance. If time and space would permit, I might cite from many of the very highest sources and distinguished authorities in Europe and America to support this statement ; but, the scope of this article being limited, I have purposely avoided bibliographical reference.

Two years ago I wrote a paper published by the TIMES AND REGISTER (September, 1890), in which I stated that in my experience, with the surgery of traumatism of the cranium and the brain, mortal meningitis so frequently supervened when we employed bichloride solution, that it was finally abandoned altogether ; when, by simply resorting to sterilized water in operations in this region, with the ice-pack over the skull as a prophylactic, recovery without meningeal involvement has been the rule, when the disorganization of substance and loss of blood have not been great. On April 19 and 29, 1892, I removed from about the center of the vertex of the skull a plaque of shattered bone driven deeply into the brain, but not lacerating the dura mater. No ether, and no antiseptics employed. Man walked in and out of the operating-room and left the hospital well on the eleventh day. The second case was April 29, 1892, of a more grave description. Four days before

patient was brought to hospital, he was injured by being struck by some sharp, conical shaped, hard substance, immediately over the uppermost border of right ear. He was somnolent, had temperature of $103\frac{1}{2}$. There was well-marked ptosis of the right eyelid. On operating by *débridement* to remove the bone, which was driven deeply through the meninges into the brain, as the shattered fragments were lifted out, there welled up through the opening in the skull, an immense quantity of disorganized blood-clot, brain substance and thick pus. We washed the hiatus out, with pure water only.

Result, left hospital well in two weeks. It has been my experience, too, that in paracentesis-thoracis the recoveries are more rapid and enduring when no antiseptic solution of any kind is employed to wash out the contaminated cavity. The mercuric solution, however, has its place in surgical therapeutics, which it must retain while medicine remains a science ; but with few exceptions, nevertheless, its mode of action must be through the general circulation, rather than as a topical application ; though, applied locally its effect is direct and immediate.

The preceding are but a few desultory notes, in a general way, on the consideration of a time-honored drug ; at one time, almost totally banished as a medicament ; except in specific disease ; to be again reinstated ; and in time again, to be cast aside ; in both instances, not because it is destitute of invaluable curative properties, but because of its untimely and indiscriminate employment.

In these few observations on the subject of the place which mercury demands in the therapeutics of surgery, the limitations within which I am restricted have prevented me from making quotations, citing more liberally from my own experience, or defining the precise indications for the administration of it.

